Bangalore Electricity Supply Company Limited
(CIN-U4010KA2002SGC030438)

Ref. No. : BESCOM/D(T)/GM(M&C)/2023-24/2188
Encl :

Corporate Office,
BESCOM, K.R. Circle,
Bangalore–560 001.
Date: 25/1/2024

Amendment No.-1

Sub: For Procurement of Portable single phase, three phase LT, HT and Universal HT&LT Electronic Reference Standard Meters (Accuchecks)

Ref: 1. Paper Notification dated 30.12.2023.
2. T.O. Bid Enquiry No. BESCOM/GM(M&C)/122/2023-24.
3. KPPP Enquiry No. BESCOM/2023-24/IND0042.
4. Pre-bid meeting held on 09.01.2024.
5. Approval of D(T) dated 25.01.2024.

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The following amendments pertaining to subject bid enquiry is herewith issued consequent to request from the prospective bidders and deliberations held during pre-bid meeting:

Sl. No	Document	Clause No.	As existing	As amended
1	Technical specifications_ LT_Single phase_ERS	b.	**Application:** The function of the RSM shall be suitable to measure the system parameters and verify the accuracy of the single-phase energy meters in the laboratory and at site without disconnecting consumers supply when used with the clamp-on CT.	**b. Application:** The function of the RSM shall be suitable to measure the system parameters and verify the accuracy of the single-phase energy meters in the laboratory and at site **both direct mode and** without disconnecting consumers supply when used with the clamp-on CT.
		c.	**SYSTEM TECHNICAL DATA:** Current Range (Imin–Imax) - **10mA to 60A with Clamp on CT**	**c. SYSTEM TECHNICAL DATA:** Current Range (Imin–Imax): **1) Direct Mode - 50mA to 10A** 2) Clamp on CT Mode - **50mA** to 60A

Sl. No	Document	Clause No.	As existing	As amended
2	Technical specifications_ LT_Single phase_ERS	g.	STANDARD RATED CURRENT AND MAXIMUM CURRENT: The Standard current rating of the RSM shall be 10mA to 60A with Clamp on CT. **i. ACCURACY REQUIREMENT:** The accuracy of RSM shall be Class 0.2s with Clamp on CT for the current range of **10mA** to 60A.	STANDARD RATED CURRENT AND MAXIMUM CURRENT: The Standard current rating of the RSM shall be, **1) Direct Mode - 50mA to 10A** 2) Clamp on CT Mode - **50mA** to 60A CT. **i. ACCURACY REQUIREMENT:** The accuracy of RSM shall be Class 0.2s with Clamp on CT for the current range of **50mA** to 60A.
3	Single phase_ERS GTP	Sl.No. 8	Basic Current in Direct mode & Maximum Current - 100mA to 10A	Basic Current in direct mode: **50mA** to 10A
4	Single phase_ERS GTP	Sl.No. 9	Basic Current with clamp On CT Maximum Current-**10mA** to 60A	Basic Current with clamp On CT Maximum Current-**50mA** to 60A
5	Technical specifications_ LT_Three phase_ERS	1.4	ACCURACY REQUIREMENT ➢ Capable of verifying the CT Ratio-MF, identifying VT Ratio error, Phase angle difference.	ACCURACY REQUIREMENT ➢ Capable of verifying the CT Ratio-MF, identifying CT Ratio error, Phase angle difference.
6	Technical specifications_ LT_Three phase_ERS	1.6	POWER CONSUMPTION: The power consumption of the RSM at a reference voltage, frequency, temperature and rated current shall not be more than 2VA total in voltage circuit excluding the leads.	POWER CONSUMPTION: The power consumption of the RSM at a reference voltage, frequency, temperature and rated current shall not be more than 30VA total in voltage circuit excluding the leads.
7	Technical specifications_ LT_Three phase_ERS	1.8	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) **with directions (+ or -)** Line current Y phase (Iy) **with directions (+ or -)** Line current B phase (Ib) **with directions (+ or -)**	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) Line current Y phase (Iy) Line current B phase (Ib)

Sl. No	Document	Clause No.	As existing	As amended
8	Technical specifications_ LT_Three phase_ERS	1.13	**Type tests** As per IS14697 (Ref - Table 12), "Test of accuracy requirements" is the super set of all other items listed in Clause 1.13. Thus, there is no further requirement to include this as a line item in Clause 1.	Type tests OR calibration report is accepted.
9	Three phase_LT_ERS GTP	Sl.No: 27	NON VOLATILE MEMORY: 32 GB, Minimum life 10 years	NON VOLATILE MEMORY: 32 GB, Minimum life 10 years, **storage of minimum 12,000 test records.**
10	Technical specifications_ HT_Three phase_ERS	7.0	**POWER CONSUMPTION** The active (self) power consumption of the Portable Reference Standard Meter at reference voltage, frequency, temperature and rated current shall not be more than **2VA** total in voltage circuit excluding the leads.	**POWER CONSUMPTION** The active (self) power consumption of the Portable Reference Standard Meter at reference voltage, frequency, temperature and rated current shall not be more than **30VA** total in voltage circuit excluding the leads.
11	Technical specifications_ HT_Three phase_ERS	9.0	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) **with directions (+ or -)** Line current Y phase (Iy) **with directions (+ or -)** Line current B phase (Ib) **with directions (+ or -)**	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) Line current Y phase (Iy) Line current B phase (Ib)
12	Technical specifications_ HT_Three phase_ERS	9.0	Display (S.No.26 in Tabulation) **MUT & System Error (Combined Error)**	Display (S.No.26 in Tabulation) **MUT Error**
13	Technical specifications_ HT_Three phase_ERS	18	Accessories ➢ **Two** set of Clamp On current transformers (CT) of 400A and 10A confirming to class 0.2S complete with connection cable for on-line testing.	Accessories ➢ **one** set of Clamp On current transformers (CT) of 400A and 10A confirming to class 0.2S complete with connection cable for on-line testing.
14	Three phase_HT_ER S GTP	Sl.No. 13	POWER CONSUMPTION IN VOLTAGE CIRCUIT : shall not be more than **2VA**	POWER CONSUMPTION IN VOLTAGE CIRCUIT : shall not be more than **30VA**
15	Three phase_HT_ER	Sl.No.1 2	VOLTAGE RANGE FOR THREE PHASE METERS	VOLTAGE RANGE FOR THREE PHASE METERS

Sl. No	Document	Clause No.	As existing	As amended
	S GTP		3x240 V (-30 to +20%)(P-N)	3x63.5V (+20% & -30%) phase to neutral (3P4W) 2x110V (+20% & -30%) Phase to Phase (3P3W)
16	Three phase_HT_ERS GTP	Sl.No.23	DUAL CT MODE FOR SIMULTANEOUS SCAN HEAD TESTING OF PRIMARY & SECONDARY SIDE OF CT OPERATED METERS	Deleted
17	Three phase_HT_ERS GTP	Sl.No. 27	NON VOLATILE MEMORY - 32 GB, minimum 10 years life	NON VOLATILE MEMORY - 32 GB, minimum 10 years life storage of minimum **12,000 test records**
18	Technical specifications_ Combined_HT_ LT_ERS	1.0	**Scope** Current Ranges: Direct Mode - 1mA to 10A Primary Clamp - 1A to 400A Secondary Clamp – 10 mA to 10A	**Scope** Current Ranges: Direct Mode - **50mA** to 10A Primary Clamp - 1A to 400A Secondary Clamp-10 mA to 10A
19	Technical specifications_ Combined_HT_ LT_ERS	7.0	**POWER CONSUMPTION** The active (self) power consumption of the Portable Reference Standard Meter at reference voltage, frequency, temperature and rated current shall not be more than **2VA** total in voltage circuit excluding the leads.	**POWER CONSUMPTION** The active (self) power consumption of the Portable Reference Standard Meter at reference voltage, frequency, temperature and rated current shall not be more than **30VA** total in voltage circuit excluding the leads.
20	Technical specifications_ Combined_HT_ LT_ERS	9.0	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) **with directions (+ or -)** Line current Y phase (Iy) **with directions (+ or -)** Line current B phase (Ib) **with directions (+ or -)**	Display (S.No.5, 6 & 7 in Tabulation) Line current R phase (Ir) Line current Y phase (Iy) Line current B phase (Ib)
21	Combined HT_LT_ERS GTP	Sl.No. 27	NON VOLATILE MEMORY - 32 GB, minimum 10 years life	NON VOLATILE MEMORY - 32 GB, minimum 10 years life storage of minimum **12,000 test records**
22	Combined HT_LT_ERS GTP	Sl.No. 13	POWER CONSUMPTION IN VOLTAGE CIRCUIT shall not be more than 2VA	POWER CONSUMPTION IN VOLTAGE CIRCUIT shall not be more than 30VA

Sl. No	Document	Clause No.	As existing	As amended
23	Technical specifications_ HT_Three phase_ERS	1.0	SCOPE: This scope covers the general and standard technical requirements, technical data, design, engineering, manufacturing, assembly, inspection and testing at manufacturer's works, supply and delivery at stores of portable light-weight Electronic Reference Standard meter (RSM) with complete accessories of accuracy class **0.2s** for Clamp on CT Mode & 0.05 for direct mode.	SCOPE: This scope covers the general and standard technical requirements, technical data, design, engineering, manufacturing, assembly, inspection and testing at manufacturer's works, supply and delivery at stores of portable light-weight Electronic Reference Standard meter (RSM) with complete accessories of accuracy class **0.1s** for Clamp on CT Mode & 0.05 for direct mode.
24	Technical specifications_ LT_Three phase_ERS	1.1	**Application** ➢ Selection of measurement mode between total or fundamental mode for four wire active, reactive and apparent power / energy shall be provided.	**Application** ➢ Deleted
25	Technical specifications_ LT_Three phase_ERS	1.7	**CONSTRUCTIONAL AND GENERAL REQUIREMENTS** The RSM shall have the facility to record and store minimum 10000 test results along with various instantaneous parameters. The life of NVM shall be minimum 10 years. The data up to at least 10000 tests shall be stored in the device and give flashing alarm when 90% of memory is used and these can be downloaded to computer using communication cord USB/RS232 port.	**CONSTRUCTIONAL AND GENERAL REQUIREMENTS** The RSM shall have the facility to record and store minimum **12000** test results along with various instantaneous parameters. The life of NVM shall be minimum 10 years. The data up to at least **12000** tests shall be stored in the device and give flashing alarm when 90% of memory is used and these can be downloaded to computer using communication cord USB/RS232 port.
26	Technical specifications_ LT_Three phase_ERS	1.1	**APPLICATION:** Harmonics Analysis for selected voltage, current, Power (Active, Reactive & Apparent) from 2nd to 40th harmonics, for analyzing the quality of power.	**APPLICATION:** Harmonics Analysis for selected voltage, current, Power (Active, Reactive & Apparent) from 2nd to **31st** harmonics, for analyzing the quality of power.

Sl. No	Document	Clause No.	As existing	As amended
		1.8	**Display (Sl no. 28)** RYB phase - Voltage and current up to 51st Harmonics.	**Display (Sl no. 28)** RYB phase - Voltage and current up to **31st** Harmonics.
27	Technical specifications_ HT_Three phase_ERS	9	**Display** **Table No. 28** RYB phase - Voltage and current up to **51st** Harmonics	**Display** **Table No. 28** RYB phase - Voltage and current up to **31st** Harmonics
28	Technical specifications_ HT_Three phase_ERS	8	CONSTRUCTIONAL AND GENERAL REQUIREMENTS The RSM meter shall be type tested for IP 51 degree of protection as per IS: 12063 against ingress of dust & moisture.	CONSTRUCTIONAL AND GENERAL REQUIREMENTS **Deleted**
29	Technical specifications_ Combined_HT_ LT_ERS	8	CONSTRUCTIONAL AND GENERAL REQUIREMENTS The RSM meter shall be type tested for IP 51 degree of protection as per IS: 12063 against ingress of dust & moisture.	CONSTRUCTIONAL AND GENERAL REQUIREMENTS **Deleted**

Further, as per the decision during pre-bid meeting, the NVM shall have storage of minimum 12,000 test records for all type of standard reference meters.

All other terms & conditions of the subject tender remain unaltered.

(Yogesh.B.K)
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